



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,883	01/05/2004	Naoshi Adachi	12054-0023	2099
22902 7590 03/13/2007 CLARK & BRODY 1090 VERMONT AVENUE, NW SUITE 250 WASHINGTON, DC 20005			EXAMINER WILLIAMS, ALEXANDER O	
			ART UNIT	PAPER NUMBER
			2826	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/13/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/750,883

Applicant(s)

ADACHI ET AL

Examiner

Alexander O. Williams

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 2826

Serial Number: 10/750883 Attorney's Docket #: 12054-0023

Filing Date: 1/5/2004; claimed foreign priority to 11/7/2003

Applicant: Adachi et al.

Examiner: Alexander Williams

Applicant's Amendment filed 12/4/2006 has been acknowledged.

Applicant's election with traverse of the species I, identified as figures 2 and 11 (device claims 1-4), filed 7/14/06 is acknowledged.

This application contains claims 5 and 8-10 drawn to an invention non-elected with traverse. A complete response to the final rejection must include cancellation of non-elected claims or other appropriate action (see 37 CFR § 1.144 & MPEP § 821.01).

Claims 6 and 7 have been cancelled.

Note: In claim 1, line 7, the phrase "the second jug" should probably be --the second jig--.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Initially, and with respect to claim 1, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hira, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

Claims 1 to 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Minami et al. (U.S. Patent # 6,607,381 B2).

1. Minami et al. (figures 1 to 48) specifically figure 1 show a heat treatment jig 1 for a semiconductor substrate that is mounted, comprising: a semiconductor substrate 5 that is heat treated; a first jig 1 that is constituted of a silicon material and comes into direct contact with the semiconductor substrate to support; and a second jig (holder) 2 that holds the first jig and is mounted on the heat treatment boat, the combination of a heat treatment jig for a semiconductor substrate that is mounted on a heat treatment boat of a vertical heat treatment furnace, comprising: a semiconductor substrate that is heat treated; a first jig that is constituted of a silicon material and comes into direct contact with the semiconductor substrate to support; and a second jig (holder) that holds the first jig and is mounted on the heat treatment boat, wherein the first jig is placed on the second jig so that the first jig is movable relative to the second jig on the surface of the second jig.

Art Unit: 2826

2. A heat treatment jig for a semiconductor substrate according to claim 1: **Minami et al. show** wherein the first jig has, in a region that comes into direct contact with the semiconductor substrate, a thickness in the range of from 0.5 to 10 mm, the surface roughness in the range of from 0.02 to 10 μm and the flatness of 100 μm or less; and the second jig has, in a region that comes into direct contact with the first jig, a thickness in the range of from 0.5 to 10 mm, the surface roughness in the range of from 0.02 to 10 μm and the flatness of 200 μm or less.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

3. A heat treatment jig for a semiconductor substrate according to claim 1: **Minami et al. show** wherein the first jig is 0.5 mm or more in a width that comes into direct contact with the semiconductor substrate.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

4. A heat treatment jig for a semiconductor substrate according to claim 2: **Minami et al. show** wherein the first jig is 0.5 mm or more in a width that comes into direct contact with the semiconductor substrate.

Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

As to the grounds of rejection under section 103, see MPEP § 2113.

[0020] For example, Japanese Patent Laying-Open No. 9-74071 (1997) proposes a heat-insulating jig formed by arranging a plurality of thin heat-shielding plates as a heat-insulating jig capable of reducing thermal capacity. **The material for this heat-insulating jig is SiC.** As to employment of quartz, the gazette shows such a negative view that quartz may be selected if the thickness of a quartz member can be technically reduced. 0068] FIG. 1 is a perspective view of a heat treatment apparatus employing an auxiliary heat-insulating jig according to the present invention;

[0069] FIG. 2 shows an image of a wafer, heat-treated with a conventional heat-insulating jig at 1000.degree. C., located on a center position taken by an X-ray topographical system;

[0070] FIG. 3 shows an image of a wafer, heat-treated with the conventional heat-insulating jig at 1000.degree. C., located on a bottom position taken by the X-ray topographical system;

[0071] FIG. 4 shows an image of a wafer, heat-treated with the auxiliary heat-insulating jig according to the present invention at 1000.degree. C., located on a bottom position taken by the X-ray topographical system;

[0107] Referring to FIG. 47, a wafer boat 4 is provided on a heat-insulating jig 2. The reaction furnace is closed with a shutter 3. The silicon wafers 5 are fixed to the wafer boat 4. The reaction furnace is vertically divided into three zones, i.e., a bottom zone 10, a center zone 11 and a top zone 12. In this experiment, a monitor wafer 5 was introduced into each of the bottom zone 10, the center zone 11 and the top zone 12 and subjected to heat treatment.

Response

Applicant's arguments filed 12/4/06 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

The insertion of Applicant's additional claimed language, for example, "in claim 1" cause for further search and consideration to make this action final.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

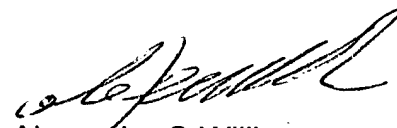
The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/48,668,732,773,706,707,712 432/253,258,5-7,152,241,11 211/41.18 414/160,287,332,403,935 118/715 206/710,832 438/680	7/28/06 3/4/07
Other Documentation: foreign patents and literature in 257/48,668,732,773,706,707,712 432/253,258,5-7,152,241,11 211/41.18 414/160,287,332,403,935 118/715 206/710,832 438/680	7/28/06 3/4/07
Electronic data base(s): U.S. Patents EAST	7/28/06 3/4/07

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O. Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alexander O Williams
Primary Examiner
Art Unit 2826

AOW
3/5/07